

REMARKS

The Examiner's reconsideration of the application is requested in view of the amendments above, drawings submitted herewith, and comments which follow.

Taking the matters raised by the Examiner in turn, as required, formal drawings are in transit to the undersigned from Europe, and will be submitted soon in a supplement to this response. They have been delayed in the mail.

To facilitate better understanding of the claims and to provide the claims in a proper sequence, the claims have been recast, in order, in the new claim set set forth above. Following is a claim chart which identifies each new claim and the corresponding former claim of the application.

Claim Chart

<u>New Claim</u>	<u>Former Claim</u>
37	1
38	3 (unchanged)
39	4 (unchanged)
40	5 (unchanged)
41	6 (unchanged)
42	7 (unchanged)
43	8 (unchanged)
44	9 (unchanged)
45	10 (unchanged)
46	11 (unchanged)
47	12 (unchanged)
48	13 (unchanged)
49	14 (unchanged)
50	15 (unchanged)
51	16 (unchanged)
52	17 (unchanged)
53	18 (unchanged)
54	20

<u>New Claim</u>	<u>Former Claim</u>
55	21
56	22 (unchanged)
57	23 (unchanged)
58	24 (unchanged)
59	25 (unchanged)
60	26 (unchanged)
61	27 (unchanged)
62	28 (unchanged)
63	29 (unchanged)
64	30 (unchanged)
65	31
66	32 (unchanged)
67	33 (unchanged)
68	34 (unchanged)
69	35 (unchanged)
70	36 (unchanged)

The new independent claims are, in substance, identical to the former independent claims, but set out the features of the invention in the form of itemized lists, in order to assist the examiner's understanding. The claims have also been clarified by inclusion of further qualifications of the values which are stored, selected, adjusted etc. The dependent claims remain unchanged.

Turning to the cited reference, Kokubo et al. US 4871912, this shows a Transmission Electron Microscope having an internal computer (29) that stores various operating parameters in a read only memory (30). A user may select one of a predetermined number of possible values for an operating parameter (for example magnification) in response to which the values of the associated parameters are called up from the ROM (30) and used to control the microscope accordingly. The microscope is interfaced with an external computer (36) which can read information in the ROM (30) and interpolate parameter values if the user selects a magnification (or beam spot size) intermediate those for which parameter values are stored in the ROM (30). The interpolated values are then stored in the system, as additional data to that already stored in the ROM (30).

There is no disclosure or suggestion that the transmission electron microscope of US 4871912 could include a tuner by which a user could adjust (effectively "fine tune") a parameter value, interpolated or otherwise, currently being used in the instrument. Nor does this reference disclose or suggest updating apparatus which updates the memory to take into account adjustment of a parameter value by the tuner, so that the adjusted value is called up if the same user controllable parameter is subsequently chosen.

Accordingly, US 4871912 fails to disclose or suggest features f) and g) of the independent claims.

In the case of the present invention, a user may select a desired value for a user controllable parameter, leading to the selection by the instrument of an associated value for a further operating parameter. Thus, for example, the user may select an accelerating voltage, in response to which the instrument selects current values for its alignment coils. While the instrument is operating in this configuration, the tuner enables the user to make alterations to the further parameter values (e.g. alignment coil current) in order to improve the quality of the information being provided by the instrument (for example an electron microscope generated image). The updating apparatus enables the improvements obtained by such adjustments to be realized the next time that the same value of the user controllable parameter is selected.

In the transmission electron microscope shown in US 4871912, interpolation can be used to enable the instrument to operate even if a user selects a parameter value (for example magnification) intermediate the values for which the associated other operating parameters have already been stored, but does not include the facility whereby the user can tune a parameter which has already been selected by the instrument either by being recalled from the memory or as a result of the interpolation process and to have the adjustment stored for subsequent use.

It is therefore submitted that the independent claims are therefore both novel and non-obvious over US 4871912.

However, applicants also wish to point out that US 4871912 fails to show or suggest an arrangement in which the electron beam can pass through any selected

one of a number of different apertures (as required by feature e) of claim 55). In this connection, the examiner appears to have assumed that the variations in spot sizes referred to in the US prior art document would inevitably be achieved by passing the beam through any selected one of a number of possible apertures. However, the electron column showing US 4871912 does not appear to have the physical configuration needed to achieve this, so that the skilled addressee would assume that spot size is altered by altering the focussing characteristics of the column.

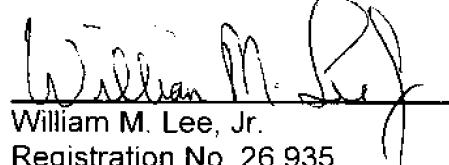
Applicants also wish to draw the examiner's attention to the fact that US 4871912 does not discuss the possible updating of existing stored parameter values, in particular to updating to neighboring parameter values where the tuner is used to adjust a parameter value interpreted from those neighboring values (claim 4).

Accordingly, it is submitted that this application is now in condition for allowance, and the Examiner's further and favorable reconsideration is urged.

As this Response is being sent during the sixth month following the Examiner's Office Action, an appropriate Petition for Extension of Time is also submitted herewith.

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Respectfully submitted



William M. Lee, Jr.
Registration No. 26,935
Barnes & Thornburg LLP
P.O. Box 2786
Chicago, Illinois 60690-2786
(312) 214-4800
(312) 759-5646 (fax)